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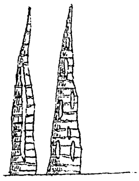
NOTES.

Antherozoids of Mosses.—Dr. Grout states that "not one botanist in a hundred has ever seen these bodies in motion." I think this is too sweeping a statement I have had no difficulty in finding motile antherozoids whenever I chose to look for them. I have seen them in the following species: *Aulacomnium palustre*, *Dicranella heteromalla*, *Physcomitrium turbinatum*, and *Bryum argenteum*. It seems to me to be only necessary to study any of the commoner species in some locality for several years, and watch the changes in development due to variation in the seasons, and the amount of moisture, to learn when and where to find them.—*E. G. Britton.*

North American Musci Pleurocarpi, issued by A. J. Grout, Ph. D.—Dr. Grout has taken the initiative in issuing these exsiccatæ by beginning with several of the genera which he has recently studied and monographed, and securing the aid of L S. Cheney and others. It is just what is needed at the present time, sets of species of certain critically-studied genera, so that those who have been trying to follow the many changes and corrections incident on the great stimulus which has been given to the study of North American mosses by the numerous European publications of the last decade, shall have a chance to understand and correctly appreciate these changes without the expenditure of so much time and money as is necessary to ferret them out individually. A similar set of acrocarpous mosses will be issued from the Herbarium of the New York Botanical Gardens by the workers there, and a large accumulation of material is awaiting sorting and determination from various parts of the country. Dr. Small has made large southern collections, Mr. Williams has lived for many years in Montana and secured many valuable specimens, and there are many other sets of specimens awaiting the students to come and work on them.—*E. G. B.*

ILLUSTRATED GLOSSARY—Continued.



38

Cribose (of the peristome teeth), perforated with small apertures. (Fig. 38.)

Cucullate calyptra, a calyptra that is hood-shaped and split on one side only. (Fig. 33.)

Cygneous (of the seta), curved suddenly downwards like a swan's neck.

Deoperculate, applied to a capsule after its lid has fallen off.

Dimidiate, split on one side.

Divisural line, the line down the teeth of a peristome, through which they split. (The zigzag line down the middle of the teeth and the line down the middle of the segments in Fig. 43.)

Emergent, or *emersed*, half uncovered; of the capsule, when the perichætial leaves reach but do not overtop it.

Endostome, see *peristome*.

Endothecium, the inner layers of cells of the capsule.

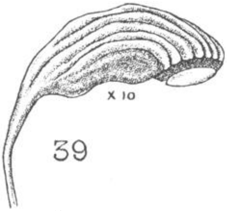
Epiphragm, a membrane covering the mouth of the deoperculate capsule; in the Polytrichums and their allies it consists of the dilated top of the columella. (Fig 35, *a*.)

Exostome, see *peristome*.

Exserted, elevated above the surrounding parts; of the capsule, when the perichætial leaves do not reach so high as its base.

Fenestrated, perforated.

Geniculate (of the seta), suddenly bent, like a knee.



39

Gibbous (of the capsule), more tumid or swollen on one side than on the other. (Fig. 39.)

Glaucous, originally applied to plants covered with a bluish white bloom, but now applied to mosses that have that color.

Granulose, or *granulated*, rough as with minute grains of sand.

Gymnostomous, without a peristome.

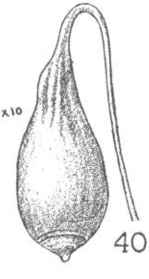
Hygroscopic, readily absorbing water and thereby altered in form or direction. *Hygrometric* is sometimes used with a similar meaning.

Hypophysis, a swelling of the seta immediately under the capsule. (Fig. 35.)

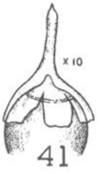
Immersed, covered up; of the capsule when the perichætial leaves project beyond it.

Leptodermous, thin coated; applied to capsules when soft and pliable.

Lid,=*operculum*, which see.



40



41

Mamillate, or *mammillar* (of the lid of the capsule), convex with a short projection in the center. (Figs. 40 and 41.)

Mitriform (of the calyptra), cleft on two or more sides, and symmetrical. (Fig. 41.)

Muricate, *Muriculate* (of the spore), rough with minute sharp points.

Neck (of the capsule), the lowest part just above the point where it joins the seta. See also *collum.*

Nodose, covered with knots or prominences.

Nodulose, covered with very small knots or prominences. (The cilia in Fig. 43.)

Ochrea, a thin sheath around the base of the seta, terminating the vaginula.

Operculum, the lid which closes the capsule and, falling, permits the spores to escape. (Figs. 32, 37, 40.)

Pachvdermous, thick skinned; applied to the walls of capsules or to cells when firm and resisting.

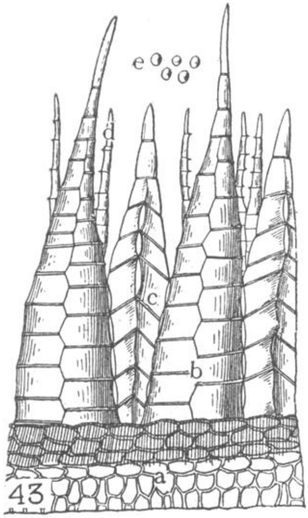
42

Papillose (of the seta), rough with small rounded or acute protuberances. (Fig. 42)

Pedicel,=*seta*, which see.

Pendulous, somewhat hanging or drooping; more so than in *cernous.* (Fig. 40.)

Peristome, the fringe surrounding the mouth of the capsule upon removing the lid. This fringe may consist of a single row of processes, known as *teeth*, as in Fig. 31, or of a double row as in Fig. 43. In the latter case the entire fringe is still the *peristome*, but the term is also applied in a particular sense to the outer row; the outer row is often spoken of as the *exostome* (*b*), and the inner as the *endostome* (*c*). The inner row consists of as many projections as the outer, but alternating with them; these are known as *processes* or *segments* (*c*). Between the segments there are often one or more slender hair-like processes known as *cilia.* (Fig. 43, *d;* fig. 36, *c.*)



43

Moss peristomes, viewed with a compound microscope, are among the most beautiful of natural objects. They are not composed of cells (except in the Polytrichaceæ and a few other small families), but of thickened cell walls. The cross markings on the teeth, segments, and cilia are the lines of junction of the transverse cell walls with the longitudinal cell walls forming the peristome. The radial walls are rarely thickened so as to appear in any way; the divisural line shows the place of their attachment to the teeth and segments.

NEW AMERICAN MOSSES.

HYPNUM (CALLIERGON) CYCLOPHYLLOTUM Holzinger, Minnesota Botanical Studies, Nov., 1896, *pl. 39*.

"Plants dark green above, yellow below; 8-10$^{cm.}$ high; erect by crowding. Stem leaves concave, ascending when moist, as broad as long, or *broader*, obtuse, entire margined, costate to apex; costa broad; leaf angles decurrent, strongly excavate, their cells *abruptly* enlarged, hyaline, 0.08–0.1$^{mm.}$ × 0.025–0.04$^{mm.}$, the thin walled cells not quite reaching the costa; upper leaf cells 0.04–0.06$^{mm.}$ × 0.008–0 01$^{mm.}$; branch leaves, of the short axillary branches, also concave, much smaller, the costa faint, not extended into the obtuse apex. Dioicous; antheridial buds numerous along the middle part of the stem, shorter than the leaves, in their axils. Fruiting plants not found.

"This plant is near *Hypnum cordifolium*, but differs from this species in having its leaves more *closely* set on the stem, costate *to apex*, and *much wider* in proportion to length; also in having the larger cells of the auricles abruptly enlarged, and the leaf cells proper *smaller*.

"It differs from *Hypnum giganteum* in its unusually broad leaves, smaller size, dark green color, and fewer and shorter branches."

Collected in Lamoille "Cave," Minnesota; associated with *Brachythecium rivulare*.

GRIMMIA (EUGRIMMIA) BRITTONNIÆ R. S. Williams, Bull. Torr. Bot. Club, **27**: 316. *pl. 19*. 1900.

"Growing in dense hemispherical tufts up to 3.5$^{cm.}$ high. Stems slender, usually bearing long branches. Outer perichætial and upper stem leaves with blade 1$^{mm.}$ in length, oblong, somewhat lanceolate pointed, concave, flat on the borders with a nearly smooth hair point up to three times the length of blade; lower leaves a little smaller with hair point scarcely equaling blade, more concave and somewhat recurved; inner perichætial leaves minute, triangular, with hair point eight to ten times length of blade; upper cells irregular, roundish or quadratic, about 0.006$^{mm.}$ in diameter, gradually becoming elongated below, towards the base three or four times longer than broad near the costa and one and a half to two times longer than broad near margin; cells